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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,808	09/07/2000	Ian R. McLean	60,426-047	1859

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EXAMINER

SAN MARTIN, EDGARDO

ART UNIT PAPER NUMBER

2837

DATE MAILED: 06/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/656,808

Applicant(s)

MCLEAN, IAN R.

Examiner

Edgardo San Martin

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,4-12 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,4-12 and 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 2, 4 – 12 and 14 - 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geddes (US 5,229,556) in view of Fukami et al. (US 4,546,733).

With respect to Claim 8, Geddes teaches an induction noise attenuation system for a combustion engine (Col.3, Lines 53 – 66) comprising a portion of an air induction system defining a passageway (Fig.1, Item 14) carrying a sound wave, a Helmholtz resonator (Fig.1, Item 58) having a chamber (Fig.1, Item 34) at least partially defining a cavity and a neck (Fig.1, Item 41) in the chamber fluidly connecting the portion of the air induction system and the cavity, the chamber and the neck producing a passive response to the sound wave, an active resonator (Fig.1, Item 28) disposed within the chamber; and a driver (Fig.1, Item 60) connected to the active resonator producing a signal for driving the active resonator and producing a forced response for supplementing the passive response (Col.4, Lines 25 – 39), but fails to explicitly disclose wherein the passageway is arranged between an intake manifold and a throttle body.

On the other hand, Fukami et al. teach a noise attenuation system a portion of an air induction system defining a passageway that is arranged between an intake manifold and a throttle body (Fig.2; Col.2, Line 66 - 39).

It would have been obvious to a person with ordinary skill in the art to employ the Geddes noise attenuation system as the Fukami et al. noise attenuator because the Geddes design would improve the noise attenuation system by producing a sound wave that would attenuate the noise produce by the fluid in the passageway, instead of adjusting the volume of the resonator.

With respect to Claim 2, Geddes teaches wherein the neck (Fig.1, Item 41) is a tubular structure extending from the chamber (Col.4, Lines 50+).

With respect to Claims 4 and 14, Geddes teaches wherein the active resonator is a loudspeaker (Fig.1, Item 20), and wherein the loudspeaker is a woofer (Col.2, Lines 1 – 14).

With respect to Claim 5, Geddes teaches wherein the chamber (Fig.1, Item 34) includes a flange (Fig.1, Item 32) with the loudspeaker (Fig.1, Item 28) supported thereon, and the loudspeaker having a diaphragm (Fig.1, Item 37) disposed within an opening in the flange for producing the forced response.

With respect to Claim 6, Geddes teaches wherein the flange (Fig.1, Item 32) includes at least one pressure equalization port (Fig.1, Item 39) there through in fluid communication with the cavity (Fig.1, Item 34).

With respect to Claim 7, Geddes teaches wherein the flange (Fig.1,Item 32) is arranged opposite the neck (Fig.1,Item 41).

With respect to Claim 9, Fukami et al. teach a control system operation for an internal combustion engine resonator in which the speed of the engine is determined and a signal is produced in order to control an actuator that tunes the resonator to attenuate the noise made by the engine (Fig.6; Col.3, Line 66 – Col.4, Line 9).

With respect to Claim 10, Fukami et al. teach wherein the signal source is engine RPM (Col.4, Line 59 – Col.5, Line 6).

With respect to Claim 11, Geddes teaches wherein the driver includes a phase compensator for synchronizing the forced response approximately 180° out of phase with the sound wave (Col.1, Lines 44 – 55).

With respect to Claim 12, Geddes teaches wherein the driver (Fig.1, Item 60) includes an amplifier (Fig.1, Item 72) for amplifying a signal from the signal source (Fig.1, Item 12) (Col.4, Lines 25 – 39).

With respect to Claim 15, Geddes teaches a method of attenuating noise in an induction system comprising,

- a) sensing an engine noise signal;
- b) producing a phase compensated engine noise signal;
- c) driving a loudspeaker with the phase compensated engine noise signal; and
- d) propagating a sound wave with the loudspeaker to attenuate the noise in the induction system. (Col.3, Line 67 – Col.5, Line 64)

However, Geddes fails to disclose the engine signal to be an engine speed signal.

Nevertheless, Fukami et al. teach a control system method for an internal combustion engine resonator in which the speed of the engine is determined and a signal is produced in order to control an actuator that tunes the resonator to attenuate the noise made by the engine (Fig.6; Col.3, Line 66 – Col.4, Line 9).

It would have been obvious to a person with ordinary skill on the art to provide the Geddes control system method with the Fukami et al. control system operations because the speed of the engine is directly proportional to the noise produced by the engine, if the speed of the engine is determined the magnitude of the noise can be determined and a control signal can be produce to tune the resonator in order to attenuate the noise.

With respect to Claim 16, Geddes teaches further including the step of e) amplifying the engine noise signal (Fig.1, Item 12) (Col.4, Lines 25 – 39).

With respect to Claim 17, Geddes teaches further including the step of f) propagating a passive sound wave with a Helmholtz resonator, wherein step d) supplements the passive sound wave (Fig.1, Item 20; Col.4, Lines 18 – 39).

With respect to Claims 18 – 20, Geddes teaches wherein step b) includes determining a loudspeaker response, wherein step b) includes determining a Helmholtz resonator cavity response, and wherein step b) includes determining a Helmholtz resonator neck response (Fig.1, Item 24; Col.4, Lines 25 – 39).

Response to Arguments

2. Applicant's arguments filed April 3, 2002 have been fully considered but they are not persuasive. The Examiner considers that the obvious combination of the patents to Geddes and Fukami et al. as discussed above is proper and disclose the limitations described by the claimed subject matter. The Applicant asserts that Geddes teach that "other fluid systems using a conduit can also benefit from the use of the present invention", based on the previous statement, the Examiner strongly believes that any person with ordinary skill in the art would be motivated to use the Geddes noise attenuation system in others fluid systems using a conduit in a manner known in the art. For example, the patents to Kameda et al. (US 5,571,239), Brackett et al. (US 5,377,629) and Tanaka et al. (US 5,446,790) teach the use of a noise attenuation system being placed "between an intake manifold and a throttle body".

With respect to the inaccuracy of the Examiner statement as indicated by the Applicant, the Examiner wishes to direct the attention of the Applicant to the above-mentioned references, Kameda et al., Brackett et al. and Tanaka et al. teach a noise attenuation system that employ a reading of the engine speed in order to produce a destructive sound wave that would attenuate the noise produced by the intake. If the speed of the engine wouldn't be proportional to the magnitude of the noise produced, then why the references of the prior art and even the Applicant would be interested in knowing the speed of the engine in order to attenuate the noise? The noise produced in

a combustion cycle is dependable upon many properties and stages of the cycle that should be known by a person with ordinary skill in the art.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edgardo San Martin whose telephone number is (703)308-1050. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (703)308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Edgardo San Martín
Patent Examiner
Art Unit 2837
Class 181
June 24, 2002


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